

WHAT IS CLAIMED IS:

1. A two-component system having one resin component and one hardener component, wherein hardening is effected in that the system cross-links by means of at least two non-identical hardening processes, one hardening process being a reaction proceeding at room temperature between at least one resin and at least one hardener, and at least a further cross-linking system is present which cross-links by means of a hardening process in which the active ingredients of the cross-linking system react by means of a photochemical and/or thermally activatable reaction, and the active ingredients of the cross-linking system which hardens by means of photochemical reaction contain a resin which may be reacted by means of a photoactivator and contain a photo-inducible photoactivator, and the active ingredients of the cross-linking system that hardens by thermal activation contain a resin which may be reacted by means of a thermoactivator and a thermo-inducible thermoactivator.
2. The two-component system of Claim 1, wherein, in addition, a hardening process by means of moisture takes place.
3. The two-component system of Claim 1, wherein the hardening is effected in at least two stages, and at least the first stage leads to only partial cross-linking.

4. The two-component system of Claim 3, wherein, as a result of the partial cross-linking, a consistency or strength results which makes a rugged process in auto body construction possible up to and with a CIP passage.

5. The two-component system of Claim 1, wherein it has a pot life of at least 30 minutes.

6. The two-component system of claim 1, wherein the two-component reaction is not set into motion until by a brief thermal heating.

7. The two-component system of Claim 1, wherein the active ingredients of the one hardening process include or comprise compounds which can react with at least one active ingredient of at least one other hardening process and/or water, and substances reacting with one another at room temperature without activation are packed in different components of the two-component system.

8. The two-component system of Claim 1, wherein one of the hardening processes is a photochemical reaction.

9. A method for sealing an auto body section by application of a sealant composition to the body section to be sealed, followed by a multi-step hardening of the sealant composition, said method comprising:

- (a) preparing a sealant composition comprising at least one resin and at least one hardener;
- (b) applying the sealant composition to said body section at room temperature to initiate hardening of the sealant composition; and
- (c) cross-linking the sealant composition by a photochemical and/or thermally activatable reaction; wherein the active ingredients of the cross-linking system which hardens by means of photochemical reaction include a resin which reacts by means of a photoactivator and a photo-inducible photoactivator, and the active ingredients of the cross-linking system that hardens by thermal activation include a resin which reacts by means of a thermoactivator and a thermo-inducible thermoactivator.

10. The method for sealing an auto body portion according to claim 9, wherein before passing through a CIP oven, the system is at least partially cured by means of thermal induction and/or a photoinduced hardening process.

11. A method for crimp fold sealing a metal auto body section by application of a sealant composition to a body section to be sealed, followed by hardening of the sealant composition, wherein the sealant composition comprises at least one resin and at least one hardener, and the hardening is effected by means of at least two non-identical hardening processes, one of the hardening processes including a room temperature hardening and at least one further hardening step including a photochemical and/or thermally activatable hardening.

12. The method of Claim 11, wherein one hardening process is a photochemical hardening.

13. The method of Claim 9, wherein the photochemical hardening and/or thermally activatable hardening is performed before a coating or wetting of the body section.

14. The method of Claim 11, wherein partial hardening is performed before painting of the body section.

15. The method of Claim 11, wherein the sealant composition is hardened by means of two non-identical hardening processes, which are performed before coating or wetting of the body section.

16. The method of Claim 11, wherein one of the hardening processes comprises a photochemical reaction which primarily hardens the outer surface of the sealant, and the at least one other hardening process comprises a reaction which hardens either a contact region of the sealant with the body section, or internal regions of the sealant.

17. The method of Claim 11, wherein one hardening process is a thermal hardening by partial heating of the adhesive and/or, at least in a first stage, is effected without an oven.

18. The method of Claim 11, wherein the non-identical hardening processes are performed at a time interval between them of less than 2 hours.

19. The method of Claim 18, wherein the hardening processes are performed in a time interval between them of less than 1 hours.

20. The method of Claim 11, wherein the hardening processes are selected from oven hardening, inductive hardening, hardening by a hot-air blower, photochemical cross-linking, reactive rehardening without a special energy supply, or combinations thereof.

21. The method of Claim 11, wherein the hardening processes effect at least a partial hardening and are performed to at least a surface hardness of the sealant composition that is sufficient for touchability or grip strength for manual handling, and/or up to a leaching resistance in circulating cleaning baths at a temperature of up to 70°C for degreasing oily auto body parts, phosphating, and/or electronic immersion painting and/or an outdoor exposure time under tropical climatic conditions of more than three weeks.

22. The method of Claim 11, wherein partial hardening of at least one of the non-identical hardening processes is effected until the sealant has a strength at least such that in the further course of the process, sacrifices in terms of appearance from air inclusions between the adhesive and the sealant are reduced.

23. The method of Claim 11, wherein, in the basic body in white phase, a crimped fold sealant is prepared which is partially hardened with UV radiation and thermally together with adhesive bonding of the crimped fold in such a way that add-on parts thus produced can be transported and after passing through at least one cleaning bath and one painting operation, can be completely thermally hardened in an oven together with painting.

24. The two-component system of Claim 2, wherein the hardening is effected in at least two stages, and at least the first stage leads to only partial cross-linking.

25. The two-component system of Claim 24, wherein, as a result of the partial cross-linking, a consistency or strength results which makes a rugged process in auto body construction possible up to and with a CIP passage.

26. The two-component system of Claim 6, wherein the brief thermal heating is in the range 50-150°C.

27. The method of Claim 12, wherein photochemical hardening and/or at least one stage of a thermal hardening is performed before coating or wetting of the body section.

28. The method of Claim 13, wherein the thermal hardening performed before a different kind of coating or wetting of the body section is performed before degreasing and/or painting.

29. The method of Claim 27, wherein the thermal hardening performed before coating or wetting of the body section is performed before degreasing and/or painting.

30. The method of Claim 15, wherein the hardening performed before coating or wetting of the body section is performed before painting.
31. The method of Claim 16, wherein one of the hardening processes is a photochemical reaction.
32. The method of Claim 31, wherein another hardening process is a two-component reaction.
33. The method of Claim 17, wherein said heating is effected by inductive heating, IR radiation, and/or a hot-air blower.
34. The method of Claim 22, wherein the sealant strength is in the contact region with the body section.
35. The method of Claim 23, wherein visual or functional sacrifices are not present in the sealant.
36. The method of Claim 11, wherein the hardening processes are selected from oven hardening, inductive hardening, hardening by a hot-air blower, photochemical cross-linking, reactive rehardening without a special energy supply, or combinations thereof.



37. The method of Claim 11, wherein the hardening processes effecting at least a partial hardening are performed to at least a surface hardness of the sealant composition that is sufficient for touchability or grip strength for manual handling, and/or up to a leaching resistance in circulating cleaning baths at a temperature of up to 70°C for degreasing oily auto body parts, phosphating, and/or electronic immersion painting and/or an outdoor exposure time under tropical climatic conditions of more than three weeks.

38. The method of Claim 11, wherein at least one of the first hardening processes is performed until the sealant has a strength at least such that in the further course of the process, sacrifices in terms of appearance from air inclusions between the adhesive and the sealant are reduced.

39. The method of Claim 11, wherein, in the basic body in white phase, a crimped fold sealant is prepared which is prehardened both with UV rays and thermally together with the adhesive bonding of the crimped fold in such a way that the add-on parts thus produced can be transported and after passing through at least one cleaning bath and one painting operation, can be completely thermally hardened in the oven together with the painting.

40. The method of Claim 38, wherein the sealant strength is in the contact region with the body section.

41. The method of Claim 39, wherein visual or functional sacrifices are not present in the sealant.

42. The method according to Claim 9, wherein the sealant composition is a two-component composition A+B where A comprises a resin containing acrylate groups and/or epoxy groups, a UV initiator and a thermally unstable initiator and B comprises a compound reactable with acrylate and/or epoxy groups, optionally further including a compound containing silane groups.

43. The method according to Claim 11, wherein the sealant composition is a two-component composition A+B where A comprises a resin containing acrylate groups and/or epoxy groups, a UV initiator and a thermally unstable initiator and B comprises a compound reactable with acrylate and/or epoxy groups, optionally further including a compound containing silane groups.